

Sonar Gerrit

The plugin shares [SonarQube](#) feedback with developers via [Gerrit](#) tools.

Plugin Information

View [Sonar Gerrit on the plugin site](#) for more information.

Requirements

Jenkins

Jenkins [version 1.625.3](#) or newer is required.

SonarQube

This plugin is intended to work with report provided by SonarQube running on a project in preview mode. That means SonarQube report generation should be included to build.

If you use Maven, fill out "Goals and options" field in "Build" section of your Jenkins job:

```
clean install sonar:sonar -Dsonar.analysis.mode=preview -Dsonar.report.export.path=sonar-report.json
```

Gerrit

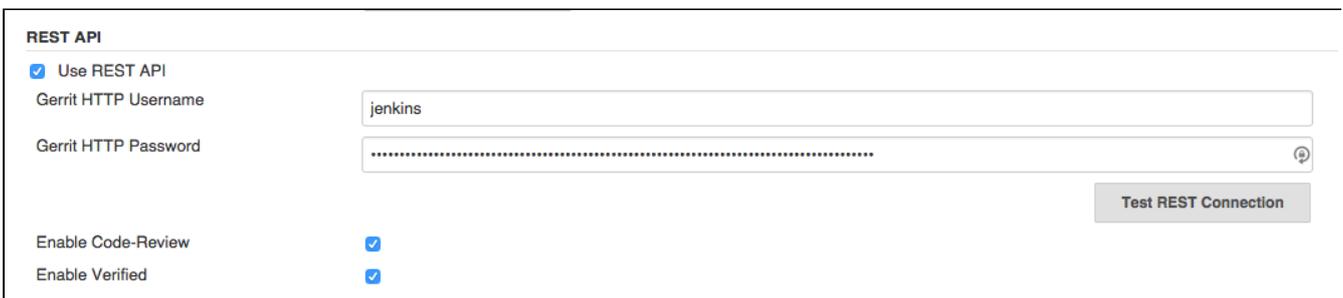
Gerrit Trigger configuration

[Gerrit Trigger](#) plugin should be installed and configured.

Rest API should be configured in the Advanced section of Gerrit Trigger settings.

HTTP authentication data should be set up. Enable Code-Review and Enable Verified checkboxes should be checked on.

For complete guidance please see [Gerrit Trigger Wiki page](#).



The screenshot shows the 'REST API' configuration section of the Gerrit Trigger plugin. It includes a checkbox for 'Use REST API' which is checked. Below it are two input fields: 'Gerrit HTTP Username' with the value 'jenkins' and 'Gerrit HTTP Password' which is masked with dots. At the bottom right of this section is a 'Test REST Connection' button. Below the REST API section are two checkboxes: 'Enable Code-Review' and 'Enable Verified', both of which are checked.

Running out of Gerrit Trigger job

In case when the plugin is running outside of a job with Gerrit Trigger the next environmental variables should be set:

- GERRIT_NAME - Gerrit server name
- GERRIT_CHANGE_NUMBER - Change number
- GERRIT_PATCHSET_NUMBER - Patchset number

Setup

Install plugin

Install the plugin via Jenkins plugin manager. Gerrit Trigger plugin should be also installed and configured.

Configure build

Sonar Gerrit plugin is intended to run as post-build action. Choose it from available post-build actions.

Plugin settings

There are several settings allows customise plugin for your needs.

There are the next sections:

SonarQube Settings

SonarQube Settings

Server URL

1. Server URL - URL of SonarQube instance used for analysis. It is also used to provide a link to a SonarQube rule in Gerrit comments. Default value: <http://localhost:9000>

Project Settings

Use setting "Project configuration" if only one SonarQube report is generated and static code analysis of the whole project is required.

Project configuration

SonarQube report path

Project base directory

Allow auto match

Sub-project configurations

Use setting "Sub-project configurations" to specify modules and paths for separate reports if modules are analysed separately or not every module needs to be analysed.

Project configuration

Sub-project configurations

SonarQube report path

Project base directory

Delete

SonarQube report path

Project base directory

Delete

Add

Settings:

1. Project base directory - subdirectory for a case when Jenkins job is related to a specific module of a big project. The path is relative to a main project root directory. Default value is empty.
2. SonarQube report path - Path to a SonarQube report generated by SonarQube while a project was being built. The path is relative to a build working directory. Default value: **target/sonar/sonar-report.json**
3. [Allow auto match](#) - setting to allow automatically match SonarQube issues to Gerrit files in case if project consists of several sub-modules, but only one SonarQube report is generated for the whole project.

Filter

Filter is used to specify what issues will be affected in the output:

- to be commented
- to affect review score
- etc

It is possible to filter issues by:

1. Severity - SonarQube issue severity. If user doesn't want issues with low severity to be reported to Gerrit, he (or she) can choose the lowest severity level to be reported. For example if "Major" level is selected, information about issues with "Major", "Critical" and "Blocker" will be included to Gerrit review. Default value: **Info**.
2. New issues only - reflects SonarQube issue "new" property. If issue is not marked as new that may be a sign that it is not created by processing commit and this issue is not supposed to be included to review.
3. Changed lines only - when only several lines are changed in a commit user may not want other lines to be commented by Gerrit. With "Add comments to changed lines only" unchanged in the commit lines will not be commented in Gerrit.

Filter Settings
Report issues having severity level higher or equal to: 
Report new issues only? 
Reports new as well as existing issues when unchecked
Add comments to changed lines only 
Reports issues for changed as well as not changed lines in files affected by patchset when unchecked

Review Settings

Review settings contains of issue filter to specify issues to be commented and review template.

Review Settings
Report issues having severity level higher or equal to: 
Report new issues only? 
Reports new as well as existing issues when unchecked
Affect changed lines only 
Reports issues for changed as well as not changed lines in files affected by patchset when unchecked
No issues found review title template 
Issues found review title template 
Issue comment template 

Report Formatting

This section allows user to customise text, intended to use as review title and issue comment.

1. Title - Review title settings allow customization of Gerrit review titles for both cases (violations found or not) separately. There are several tags to be replaced by real values allowed in this context:
 1. <info_count> - will be replaced with count of issues having INFO severity level;
 2. <minor_count> - will be replaced with count of issues having MINOR severity level;
 3. <major_count> - will be replaced with count of issues having MAJOR severity level;
 4. <critical_count> - will be replaced with count of issues having CRITICAL severity level;
 5. <blocker_count> - will be replaced with count of issues having BLOCKER severity level;
 6. <min_minor_count> - will be replaced with count of issues having MINOR severity level or higher;
 7. <min_major_count> - will be replaced with count of issues having MAJOR severity level or higher;
 8. <min_critical_count> - will be replaced with count of issues having CRITICAL severity level or higher;
 9. <total_count> - will be replaced with total count of issues.
2. Comment - Issue comment pattern. Available tags:
 1. <key> - will be replaced with issue key;
 2. <component> - will be replaced with issue component info;
 3. <message> - will be replaced with issue message;
 4. <severity> - will be replaced with issue severity;
 5. <rule> - will be replaced with issue rule name;

6. <rule_url> - will be replaced with link to rule description on SonarQube if SonarQube URL is provided in SonarQube settings section or rule name if URL is not provided;
7. <status> - will be replaced with issue status;
8. <creation_date> - will be replaced with issue creation date.

Score Settings

Starting with v. 2.1 it's become possible to specify a separate filter for score settings.

Score Settings

Post score?

Report issues having severity level higher or equal to: 

Report new issues only? 
Reports new as well as existing issues when unchecked

Affect changed lines only 
Reports issues for changed as well as not changed lines in files affected by patchset when unchecked

Category 

Score for no SonarQube violations found case 

Score for SonarQube violations found case 

1. Post score - This setting describes whether it is necessary to post score to Gerrit or not.
2. Category - Gerrit category used for score posting. Default value: **Code-Review**.
3. Score for no SonarQube violation found case - Score to be posted to Gerrit. Default value: **+1**
4. Score for SonarQube violations found case - Score to be posted to Gerrit. Default value: **-1**

Please note: to use Gerrit category other than Default it is necessary to configure it in Gerrit. See details in [Gerrit Documentation](#).

An example of settings to be added to the project.config for creating Sonar-Verified category:

```
[label "Sonar-Verified"]
  function = MaxWithBlock
  value = -1 Issues found
  value = 0 No score
  value = +1 Verified
  defaultValue = 0
```

And access rights:

```
[access "refs/heads/*"]
  label-Sonar-Verified = -1..+1 group Project Owners
  label-Sonar-Verified = -1..+1 group Non-Interactive Users
```

Credentials

To override the credentials used to post comments on the job level set up section "Override default HTTP credentials". (Global credentials on the Gerrit Trigger Server level should be set up as well for Gerrit Trigger needs.)

Gerrit Settings

Override default HTTP credentials?

HTTP Username 

HTTP Password 

Gerrit Server to check connection 

Success

1. Override default HTTP credentials? - This setting describes whether it is necessary to override Gerrit credentials from the Gerrit Trigger Server settings or not.
2. HTTP Username - Username to be used to post review result to Gerrit.
3. [HTTP Password](#) - Password to be used to post review result to Gerrit.
4. Gerrit Server - The server used to check connection with overridden credentials. The value **does not** affect plugin settings and **only** used to verify credentials.

Notification Settings

This functionality works when Gerrit is configured with post server settings.

1. To be notified if no SonarQube violations found - Choice of persons to be notified. Default value: **None**.
2. To be notified if SonarQube violations found - Choice of persons to be notified. Default value: **Owner**.
3. [To be notified if negative score is posted](#) - Choice of persons to be notified. Default value: **Owner**.

Options:

- None - No notification regarding particular review will be sent.
- Owner - Notification with review results will be sent to a change owner.
- Owner & Reviewers - Notification with review results will be sent to an owner and to all the change reviewers added to the change.
- All - Everyone in Gerrit project will receive notification.

Notification Settings

To be notified if no SonarQube violations found	<input type="text" value="Owner"/>	
To be notified if several SonarQube violations found	<input type="text" value="Owner and Reviewers"/>	
To be notified if build got negative score	<input type="text" value="All"/>	

[Delete](#)

Pipelines support

Basic support for pipelines is added in 2.0

Pipeline with default settings example

```
node {
    // trigger build
    git url: 'ssh://your_project_repo'
    // Fetch the changeset to a local branch using the build
    parameters provided to the build by the Gerrit Trigger...
    def changeBranch = "change-${GERRIT_CHANGE_NUMBER}
-${GERRIT_PATCHSET_NUMBER}"
    sh "git fetch origin ${GERRIT_REFSPEC}:${changeBranch}"
    sh "git checkout ${changeBranch}"

    // Get the maven tool.
    def mvnHome = tool 'M3'
    // Mark the code build 'stage'....
    stage 'Build'
    // Run the maven build
    sh "${mvnHome}/bin/mvn clean install sonar:sonar -Dmaven.
test.skip=true -Dsonar.analysis.mode=preview -Dsonar.report.export.
path=sonar-report.json"

    // to run plugin with default settings
    stage 'Review'
```

```

sonarToGerrit()
}

```

Pipeline overridden settings example

```

sonarToGerrit (
  inspectionConfig: [
    serverURL: 'http://localhost:9000',
    baseConfig: [
      projectPath: '',
      sonarReportPath: 'target/sonar/sonar-
report.json',
      autoMatch: true
    ]
    // OR
    //subJobConfigs : [
    //      [
    //          projectPath: 'module0',
    //          sonarReportPath: 'target/sonar
/sonar-report.json'
    //      ],
    //      [
    //          projectPath: 'module1',
    //          sonarReportPath: 'target
/module1/sonar/sonar-report.json'
    //      ]
    //]
  ],
  reviewConfig: [
    issueFilterConfig: [
      severity: 'INFO',
      newIssuesOnly: false,
      changedLinesOnly: false
    ],
    noIssuesTitleTemplate: 'SonarQube violations have not been
found.',
    someIssuesTitleTemplate: '<total_count> SonarQube
violations have been found.',
    issueCommentTemplate: '<severity> SonarQube violation:
\n\n\n<message>\n\n\nRead more: <rule_url>'
  ],
  scoreConfig: [
    issueFilterConfig: [
      severity: 'INFO',
      newIssuesOnly: false,
      changedLinesOnly: false
    ],
    category: 'Code-Review',
    noIssuesScore: 0,
    issuesScore: -1
  ],
  notificationConfig: [
    noIssuesNotificationRecipient: 'NONE',
    commentedIssuesNotificationRecipient: 'OWNER',
    negativeScoreNotificationRecipient: 'OWNER'
  ]
)

```

```
    ],
    authConfig: [
        username: 'Jenkins',
        password: 'HTTP Password of user called Jenkins'
    ]
}
```

Known issues:

 **JENKINS-43804** - Pipeline: Integrate with Credentials Plugin [OPEN](#) - [Overriding Gerrit credentials is unsafe \(2.0\)](#)

Result example

Result of plugin work in Gerrit history:

Jenkins
Patch Set 1: Sonar-Verified-1
(17 comments)
17 SonarQube violations have been found.
[src/main/java/com/aquarellian/genar/jenkins/SonarToGerritBuilder.java](#)
Line 99: MAJOR SonarQube violation:

Use "Integer.parseInt" for this string-to-int conversion.

Read more: http://localhost:9000/coding_rules#rule_key=squid%3AS2130

Gerrit commit:

```
99 | int changeNumber = Integer.valueOf(envVars.get("GERRIT_CHANGE_NUMBER"));
```

Jenkins 9:40 PM
MAJOR SonarQube violation:

Use "Integer.parseInt" for this string-to-int conversion.

Read more: http://localhost:9000/coding_rules#rule_key=squid%3AS2130
[Reply](#) [Done](#) [Fix](#)

Score posted:

Owner	Tatiana Didik
Reviewers	Jenkins x Add...
Project	genar 
Branch	master
Topic	
Strategy	Merge if Necessary
Updated	2 days ago

[Cherry Pick](#) [Rebase](#) [Abandon](#) [Follow-Up](#) [Say hello](#)

Code-Review
Sonar-Verified +1 Jenkins
Verified

Troubleshooting

Plugin fails build with message "Unable to post review. Request failed"

This message occurs when RestAPIException is thrown by Gerrit API on attempt to post request.

Since version 1.0.7 it is possible to obtain a full stacktrace of the exception using a logger for class

```
org.jenkinsci.plugins.sonargerrit.SonarToGerritPublisher
```

Name

Loggers

Logger Log level

List of loggers and the log levels to record

The log will contain necessary information about the exception as follows:

```
Nov 04, 2016 10:43:25 PM INFO org.jenkinsci.plugins.sonargerrit.SonarToGerritPublisher logMessage
Getting Sonar Report from: [redacted]target/sonar/sonar-report.json
Nov 04, 2016 10:43:25 PM INFO org.jenkinsci.plugins.sonargerrit.SonarToGerritPublisher logMessage
Report has loaded and contains 24 issues
Nov 04, 2016 10:43:25 PM INFO org.jenkinsci.plugins.sonargerrit.SonarToGerritPublisher logMessage
Connected to Gerrit: server name: localhost. Change Number: 215, PatchSetNumber: 1
Nov 04, 2016 10:44:11 PM SEVERE org.jenkinsci.plugins.sonargerrit.SonarToGerritPublisher perform
Unable to post review: Request not successful. Message: Bad Request. Status-Code: 400. Content: label "Sonar-Review" is not a
configured label.
com.urswolfer.gerrit.client.rest.http.HttpStatusException: Request not successful. Message: Bad Request. Status-Code: 400. Content:
label "Sonar-Review" is not a configured label.
    at com.urswolfer.gerrit.client.rest.http.GerritRestClient.checkStatusCode(GerritRestClient.java:370)
    at com.urswolfer.gerrit.client.rest.http.GerritRestClient.request(GerritRestClient.java:128)
    at com.urswolfer.gerrit.client.rest.http.GerritRestClient.postRequest(GerritRestClient.java:103)
    at com.urswolfer.gerrit.client.rest.http.changes.RevisionApiRestClient.review(RevisionApiRestClient.java:65)
    at org.jenkinsci.plugins.sonargerrit.SonarToGerritPublisher.perform(SonarToGerritPublisher.java:248)
    at hudson.tasks.BuildStepMonitor$1.perform(BuildStepMonitor.java:20)
    at hudson.model.AbstractBuild$AbstractBuildExecution.perform(AbstractBuild.java:770)
    at hudson.model.AbstractBuild$AbstractBuildExecution.performAllBuildSteps(AbstractBuild.java:734)
    at hudson.maven.MavenModuleSetBuild$MavenModuleSetBuildExecution.post2(MavenModuleSetBuild.java:1040)
    at hudson.model.AbstractBuild$AbstractBuildExecution.post(AbstractBuild.java:683)
    at hudson.model.Run.execute(Run.java:1770)
    at hudson.maven.MavenModuleSetBuild.run(MavenModuleSetBuild.java:529)
    at hudson.model.ResourceController.execute(ResourceController.java:89)
    at hudson.model.Executor.run(Executor.java:240)
Nov 04, 2016 10:49:32 PM INFO org.jenkinsci.plugins.sonargerrit.SonarToGerritPublisher logMessage
Getting Sonar Report from: [redacted]target/sonar/sonar-report.json
Nov 04, 2016 10:49:32 PM INFO org.jenkinsci.plugins.sonargerrit.SonarToGerritPublisher logMessage
Report has loaded and contains 24 issues
Nov 04, 2016 10:49:32 PM INFO org.jenkinsci.plugins.sonargerrit.SonarToGerritPublisher logMessage
Connected to Gerrit: server name: localhost. Change Number: 215, PatchSetNumber: 1
Nov 04, 2016 10:49:33 PM INFO org.jenkinsci.plugins.sonargerrit.SonarToGerritPublisher logMessage
Review has been sent
```

Version incompatibilities

Version 1.0.5

In this version plugin settings has moved from Build Steps to Post Build Actions. User needs to reconfigure jobs, or settings will be erased to default.

Versions

Version 2.3 (2 Apr 2018)

Bugs Fixed

 [JENKINS-49639](#) - Sonar Gerrit plugin not posting comments when changedLinesOnly == true RESOLVED

Version 2.2.1 (5 Feb 2018)

Bugs Fixed

 [JENKINS-49172](#) - Pipeline snippet generator no longer working RESOLVED

Version 2.1 (6 Jan 2018)

Bugs Fixed

1. [JENKINS-43730](#) - No issues reported if there are no Project Settings configurations

New Features

1. [JENKINS-48808](#) - Allow file name auto-match for projects with several modules
2. [JENKINS-48807](#) - Implement separate filter for score settings

Version 2.0 (24 Apr 2017)

New Features

1. [JENKINS-43397](#) - Support pipelines (initial)

Version 1.0.8 (6 Apr 2017)

Bugs Fixed

1. [JENKINS-43093](#) - Replace NPE stacktrace with message in case when Gerrit Change and Patchset numbers are not set
2. [JENKINS-43047](#) - Fix issue processing for nested modules
3. [JENKINS-42465](#) - Fix LDAP lockout when using Gerrit HTTP password

New Features

1. [JENKINS-40970](#) - Add an option to override Gerrit HTTP credentials
2. [JENKINS-31240](#) - UI: Hide "Score Settings" section if "Post scor" is not checked

Version 1.0.7.6 (10 Nov 2016)

New Features

1. [JENKINS-33892](#) - Add details of RestAPIException to a log

Version 1.0.6 (3 Dec 2015)

New Features

1. [JENKINS-31892](#) - Support multiple project locations for multi-jobs

Version 1.0.5 (18 Nov 2015)

Bugs Fixed

1. [JENKINS-31238](#) - Replace "Sonar" with "SonarQube" in plugin ui

New Features

1. [JENKINS-31639](#) - Notify user about plugin changes causing incompatibility
2. [JENKINS-31003](#) - Move plugin from post-build steps to post-build actions

Version 1.0.4 (24 Oct 2015)

Bugs Fixed

1. [JENKINS-31001](#) - Unable to save changes for Filter settings

New Features

1. [JENKINS-31006](#) - Allow user to specify Gerrit category and post score under it.
2. [JENKINS-31005](#) - Move some settings to Advanced section
3. [JENKINS-31004](#) - Check if Gerrit RESTAPI is enabled

Version 1.0.3 (13 Oct 2015)

Bugs Fixed

1. [JENKINS-30932](#) - Localisation is failed on error messages
2. [JENKINS-30933](#) - NPE on attempt to run job with no SonarQube execution configured

Version 1.0.2 (13 Oct 2015)

New Features

1. [JENKINS-30915](#) - Support plugin run in downstream jobs

Version 1.0.1 (9 Oct 2015)

New Features

1. [JENKINS-30853](#) - Support projects located in subdirectories of repository root directory.

Bugs Fixed

1. [JENKINS-30863](#) - Unable to run plugin: NoSuchMethod Error: GerritTrigger.getTrigger

Version 1.0 (7 Oct 2015)

Basic functionality